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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

QM02/0411

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WASHINGTON DC 20007-5109

ART UNIT

PAPER NUMBER

3743  
DATE MAILED:

04/11/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Application No.

09/121,702

Applicant(s)

Beck et al.

Examiner

FORD

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12-27-00
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 4-9, 11-17 is/are pending in the application.
- 4a) Of the above claim(s) 15-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1, 4-7, 9 and 11-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 22
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

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Applicants' response to the election requirement, denoted Paper No 21 here, has been carefully considered. Applicants' election of the species original Figures 1-3 (claims 1, 4-7, 9 and 11-14), without traverse, is acknowledged. A translation of JA '813 has been received and is appreciated.

Claims 15-17 stand withdrawn as to a non-elected species.

Turning to Applicants' response of September 5, 2000 (Paper No. 18), independent claims 1 and 12 stress the formation of four independent zones fed by four independent cold ducts and that the air is routed laterally around the sides of the heater core. Four independent air-mixing chambers are defined by partition walls located downstream of the heater. A clause has been added to claims 1 and 13 that states that both the quantity and the temperature of the air fed to the four zones can be independently controlled. On this last claim limitation, the Examiner does not see any descriptive support in the originally filed specification and claims to support an explicit limitation that the quantity of air fed to any one of each of the four independent zones can be controlled independently of the quantity of air fed to any other of the four independent zones. The specification supports only separate temperature control of each zone as is detailed in the rejection which follows.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claims 1, 4-7, 9, 11, 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The discussion immediately above is incorporated by reference. The specification, in its most detailed description of the control of the invention (found on page 6, lines 10-14) states that the air temperature in each mixing space "can be adjusted separately, with the result that different temperature-controlled air can be fed to four air-conditioning zones." There is no description to support a claim encompassing independent control of the quantity of air fed to each zone as claimed in claim 1 and 13 and argued in Paper No. 18, page 7, first paragraph, to be a characteristic which distinguishes Applicants' claimed subject matter from that of DE '359. The limitation in claim 1 that "both the quantity and temperature of the air fed to each of the four associated heating/air-conditioning zones is independently controllable with respect to each other zone" is not supported by the disclosure as originally filed. Nor is descriptive support for this subject matter found in the translation of the priority document (197 31 908.4) received September 5, 2000.

Regarding pages 5-8 of Paper No. 18, Applicants have provided a translation of foreign priority document for this application (197 31 908.4, filed in Germany on July 24, 1997) and ~~it~~ appears to support most of the descriptive matter in the current application, but it is not

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substantially identical to it. Notably absent, for example, in the priority document is Figure 3 of the current application.

In footnote 1 of page 6 of Paper No. 18, the Examiner agrees with everything said there, but wishes to add that the "Heiz- oder..." reference (which was supplied with only the "odd number" pages) was properly and presumptively treated as prior art based on applicants representations, until applicants made it clear that it was not admitted prior art and antedated it by perfecting their foreign priority claim under 35 USC 119.

On pages 6 - 7 of Paper No. 13, Applicants attempt to distinguish the currently claimed subject matter from at least DE '359 based on newly claimed subject matter not supported by the specification as originally filed. Those arguments are of no moment. In the middle of page 7 of Paper No. 13, Applicants note the ages of the references and suggests that alone is an indicia of non-obviousness. The Examiner disagrees. Again, four zone temperature control systems are not new as disclosed in applicants' specification with respect to prior art FR 2717747 and DE 3940361. DE '359 also shows a four zone system in Figures 4-6. It is submitted that what has changed in the automotive art in the last two decades is the size of automobiles. The average size car in 1998 is much smaller than the average size car in 1988. This has forced car makers to reduce the size of components. Smaller sizes are driving the automotive industry and its suppliers to look for smaller solutions to problems. In the luxury car market (Mercedes, Lexus, BMW etc.), where relatively expensive four-zone heating and cooling systems are, no doubt, to be first deployed, the need for compact packaging of the air-conditioner/heater was much greater at the

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time that this application was filed than in the past. It is respectfully submitted that the age of the references and the obviousness or non-obviousness of their combination must be judged at the time the current invention was made not in a purely historical context.

At the bottom of page 7 of Paper No. 13, Applicant incorrectly identifies DE '359 as the only four zone system in the prior art. This is not true. In addition to two other four-zone systems discussed in the prior art section of Applicants' specification, there are numerous others in the prior art in the shoe cases here at the PTO. The Examiner has cited what he considers to be the closest prior art, but that is not to be taken to mean that there are no other prior art four-zone systems. It is submitted that the Examiner is under no obligation to cite all of these prior art four-zone systems, but the Examiner does know of their existence and does not wish the file to reflect the mistaken impression that DT 3514359 is the only four-zone system prior art in existence.

At the very bottom of Paper No. 18, page 7, an argument is presented which the Examiner has difficulty understanding. Applicants assert that DT 3514359 is not constructed in a certain way (i.e. "DE '359 is not designed that way"). The Examiner does not speak or read German, Applicants' native language. Is there some translation or explanation of DE '359 available that the Examiner ~~can~~ rely on? It is extremely difficult to address Applicants' arguments in detail without more knowledge of the contents of the disclosure of DE '359. What precisely is it about the design of DE '359 that would preclude one from concluding that it would have been obvious to use separate louvers and flaps in the four cold air passages to independently control the temperature in each of the four air-mixing zones?

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JA 58-136813 in view of Inoue (US 5,775,407) or Egawa (JA 58-122213).

JA '813 (Fig. 3) teaches a heater 12 having moveable lamellae 22 and 23 controlling the amount of hot air mixing with cold air bypassing the heater through ducts 8 and 9. The cold air bypasses are regulated by flaps 20 and 21. The air in the air mix chamber immediately behind elements 21 and 23 is fed to the back seat occupants through duct 3 and the air in the air mix chamber immediately behind elements 20 and 22 is fed to the front seat occupants through ducts 2 and 4. JA '813 (Fig. 2) is similar, but uses different cold air flaps 10 and 11 in place of flaps 20 and 21. A partition 13 divides the casing to separate the two air mix chambers from one another. Thus, JA '813 is a two-zone (front-seat & rear-seat configuration) in which "the mixing ratio of the cool air and warm air is separately adjusted in the air passages" (translation, page 5, lines 13-15) by shutters 20, 21, 22 and 23. Figure 2 of JA '813 works in an analogous manner. JA '813 does not teach independent right and left zones for the passenger's side and driver's side of the compartment.

Inoue teaches, in the same art, forming a <sup>vertical</sup>~~horizontal~~ partition 17 to split the HVAC casing of an automobile system into a passenger's side and driver's side sub-system, each sub-system on

← typo

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either side of partition 17 being the essentially identical mirror-image of the opposite side of that same partition. Egawa is similar and the vertical partition is shown at 8.

To have split the casing of JA '813, in either of Figures 2 or 3, in half vertically, by installing a vertical partition in the manner taught by Inoue (at 17) or Egawa (at 8) to permit the driver and passenger sides of the vehicle (both in the front and rear as disclosed by JA '813) to have independent control over the resulting four zone system would have been obvious to one of ordinary skill in the art to improve occupant comfort. Thus, four passengers seated in such an automobile could each individually set their desired temperature and achieve greater comfort than with two-zones or the traditional one-zone systems.

In its pithiest statement, it would have been obvious to have duplicated the (front-seat & rear-seat configuration) system shown in Figures 2 or 3 of JA '813 on either side of a vertical partition as taught by either Inoue or Egawa. One major advantage of JA '813 is small size (translation page 5, last full paragraph).

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 1 and 7 above, and further in view of DT 3514359 or DE 3940361 (the latter discussed on page 1 of the specification).

Each of these references (DT '359 in Figures 4-6 and DE '361) teaches four zone air-mix type automobile HVAC systems are known and reinforce the obviousness rejection above by explicitly disclosing that the four zone system that results from combining the references in the previous rejection (i.e JA '813 and either of Inoue or Egawa) are already known in the art and is



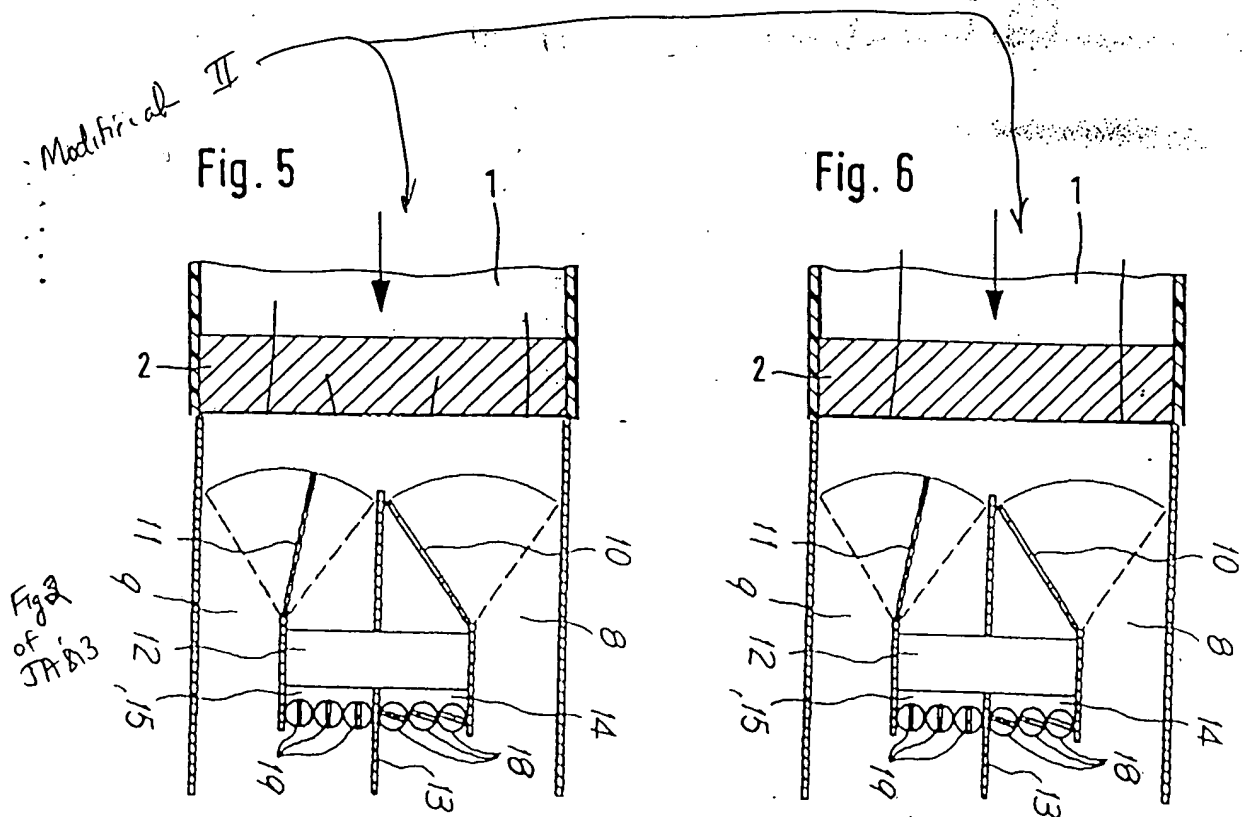
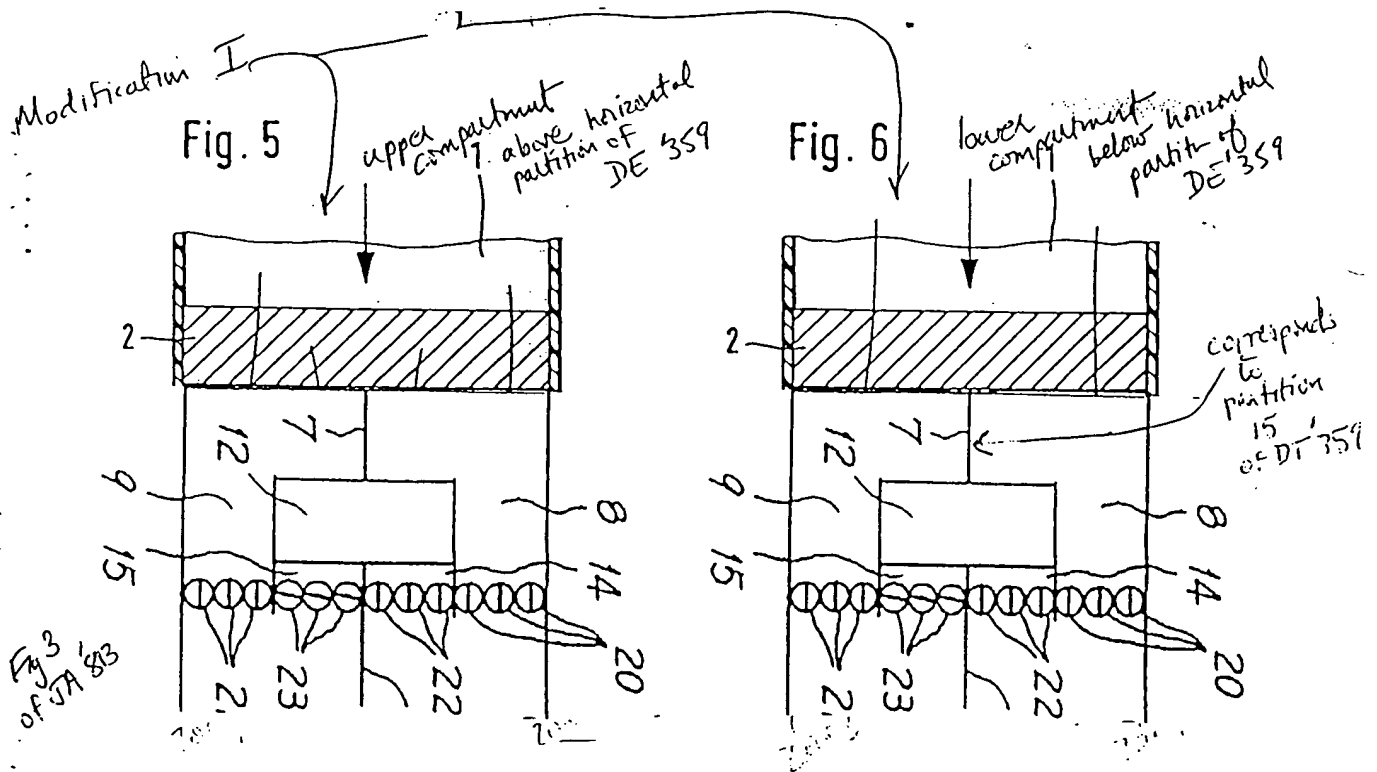
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not to be the impermissible byproduct of the Examiner using hindsight reconstruction, using Applicants' own disclosure as a template by which to combine references. It is submitted that combining the references in the manner suggested above to achieve a compact four zone system (known in the prior art to exist and recognized to be advantageous for occupant comfort as shown by DT '359 in Figures 4-6 and DE '361) would have been obvious in view of this prior art.

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of DT 35143/59 and JA 58-136813.

Figures 4-6 of DT '359 disclose a four zone system downstream of a split heater 3 and 4. Cold air bypass flaps 7, 8, 7' and 8' close off four cold air bypasses. Air mix dampers 5 and 6 in both figures 5 and 6 control cold/hot air mix ratios. To have modified DT '359 with either of the heater/bypass configurations taught by JA '813 to permit the use of a single heater core rather than the split type shown by DT '359 would have been obvious to one of ordinary skill in the art. The proposed modifications are shown pictorially on the next page.

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Claims 4-6 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior as applied to claims 1 above, and further in view of Otsuka (US 3881546) and Logsdon (US 3967779).

Otsuka discloses in Figure 3 a conventional air-mix damper configuration in Figure 3 and similarly Logsdon provides a similar teaching and describes explicitly what is believed by the Examiner to be inherently disclosed by Otsuka. It is considered conventional to mix hot and cold flows in these types of air mix systems to achieve the desired temperature by angling the flows towards one another when both the cold air flaps and the warm air flaps are partially open. The process is described in some detail in Logsdon column 2, lines 9-32, incorporated here by reference and is deemed to be inherently disclosed in Otsuka. To have controlled the mixing devices of the prior art relied upon above to angle the hot and cold flows towards one another to achieve improved mixing when the hot and cold ducts are open simultaneously would have been obvious to one of ordinary skill in the art. Regarding claim 5, Logsdon teaches flaps having curved portions 25 to improve sealing when the flaps close. To have used this type of louver damper feature in the prior art to JA '813 (Figure 3, modifying dampers 20-23) would have been obvious to improve sealing.

19 Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claim 1 above, and further in view of Sugawara et al. or Moore.

To have used curved flaps to help direct flow to the desired location would have been obvious to one of ordinary skill in the art in view of the teachings of Sugawara. Similarly to have

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used curved air-foil shaped flaps to reduce pressure drop would have been obvious in view of the teachings of Moore.

Claims 7, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 1 above, and further in view of Sarbach.


Sarbach teaches a parallel electric heater and coolant heater which would have been obvious to have substituted for the single core heater shown in the prior art where mounting on an electric vehicle was desired. Typically the waste heat in electric vehicles is more limited than in conventional ICE engines, hence the need for the auxiliary electric heater as disclosed by Sarbach.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication should be directed to John Ford at telephone number (703) 308-2636.



**John K. Ford**  
**Primary Examiner**